DOCUMENT RESUME

ED 115 595 SP 009 664

AUTHOR Reich, Carol
TITLE The Effect of a Teacher's Sex on Career Development.
INSTITUTION Toronto Board of Education (Ontario). Research Dept.
PUB DATE Sep 75
NOTE 82p.

EDRS PRICE MF-$0.76 HC-$4.43 Plus Postage
DESCRIPTORS Employment Opportunities; Employment Qualifications; *Equal Opportunities (Jobs); Occupational Surveys; *Promotion (Occupational); Questionnaires; *Sex Discrimination; Teacher Qualifications; *Women Teachers

ABSTRACT

A survey was conducted of a sample of 1,163 male and female teachers, consultants, and administrators of a large, urban school system. Data was collected about their formal qualifications, job performance, the extent to which they had been encouraged to apply for promotion, the number of applications they had made, and the positions they had held. The data was analyzed using a series of stepwise multiple regression analyses. Results indicated that there were both independent and cumulative effects for sex at each stage of a teacher's career. Woman teachers, first of all, had less formal qualifications in terms of years of experience and earned degrees and certificates. But even women with equivalent qualifications to men performed at a lower level. Likewise, lower qualifications and job performance resulted in women receiving less encouragement to apply for promotion, but even well qualified women were less likely to receive encouragement than men of equivalent standing. The same was true for number of applications, and for promotion itself, with both cumulative and independent effects for sex being present. Data on the few women who were in positions of responsibility showed that they were older, less likely to be married, and held lower level positions than men in positions of responsibility, even though their job performance and level of encouragement was the same. (The teacher questionnaire, descriptions of the career development concepts presented, and tables are included in the appendixes.) (Author/BD)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

RESEARCH SERVICE

issued by the

Research Department

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

2

THE BOARD OF EDUCATION FOR THE CITY OF TORONTO

ISSN 0316-8786

THE EFFECT OF A TEACHER'S SEX ON CAREER DEVELOPMENT

Carol Reich

#131

September, 1975

TABLE OF CONTENTS

	Page No.
INTRODUCTION	1
METHOD	7
RESULTS	9
Congruence of the Present Study with Previous Research	9
A Model of Career Development	11
1. The Effect of Sex on Paper Credentials	15
2. The Effect of Sex on Job Performance	19
3. The Effect of Sex on Encouragement	26
4. The Effect of Sex on Applications	28
5. The Effect of Sex on Promotion	32
6. The Effect of Sex on Offers of Promotion	34
7. Women Who Have Been Successful	34
SUMMARY OF SEX EFFECTS	36
APPENDIX A	43
APPENDIX B	53
REFERENCES	76

INTRODUCTION

Although the teaching profession as a whole is largely female, women hold very few positions of responsibility within the educational system. Seawell and Canady (1974) quote the following national statistics for the U.S.: in 1972-73, 66% of all teachers were women, but women held only --

1) 22% of all elementary and 1% of all secondary principalships,

2) 39% of all elementary and 6% of all secondary assistant principalships, and

3) 12% of all positions at the level of assistant superintendent or above.

Furthermore, these figures represent a small but absolute decrease from the preceding year.

The picture in Toronto is similar: while 59% of the academic staff are women, women hold only --

1) 11% of all elementary and 10% (3/31) of all secondary school principalships,

2) 21% of all elementary and 11% of all secondary school vice-principalships, and

3) 17% of all academic positions at the level of assistant superintendent or above.

Going below this level, only 2 of the 15 central department heads are women, and 55 out of the 291 (19%) secondary school department heads, many of whom are heading departments of physical education and home economics.

As can be seen from the above data on principalships, women fare best in the elementary panel, although even here they are not found proportional to their numbers. This is also seen in elementary school

coordinators, who are almost evenly split between the sexes: 143 men and 115 women. The more equitable position of women in the elementary grades may be because the care of small children is viewed as a female task. The same view may also be responsible for the fact that special education, which occurs primarily at the elementary level, is a woman's province. Of the 13 coordinators and consultants in special education, 7 are women. Six of the nine principalships and vice-principalships in the reading clinics are held by women.

Several reasons for this inequality come quickly to mind. First of all, most women teachers will interupt their careers for some period of time. In 1959, Mason, Dressel, and Bain found that 70% of beginning teachers in the United States planned to leave the profession at some point in time in order to become homemakers. Stokes (1970) reports Ontario data from the late sixties which shows that 75% of the members of the Federation of Women Teachers and 81% of a sample of student teachers planned to leave. However, most of these women also planned to eventually return. Almost all of the new teachers in Mason, Dressel, and Bain's study viewed homemaking as only a temporary career, as did 64% of the practicing teachers and 93% of the student teachers in Stoke's sample. Stokes further found that practicing teachers who did interrupt their careers for home responsibilities, tended to return in about four years. A consequence of this pattern is that women teachers will generally have <u>fewer years experience</u> in education then men of comparable age.

However, even women with equal experience to that of men are less likely to be promoted (Seawell & Canady, 1974). This may be partly due to the fact that, even when they are professionally employed, women

teachers have more family responsibilities than men and thus have less time to devote to their careers. Thirty-nine per cent of the married women in the Federation of Women Teachers sample said that family responsibilities interferred to some extent with their work as teachers. Greaball and Olson (1973) found that women teachers saw themselves first as wives, than as mothers, and finally as teachers. Forty per cent of this group said that they would leave teaching if their husband desired it, and 80% viewed their husband's career as more important than their own. Thus, women teachers have role conflicts with reference to the family. There is evidence that women within education are even more traditional in this regard than women in other professions (Herman and Sedlacek, 1974, McMillin 1974).

Women teachers also have lower aspirations than men. Only 22% of the women in Greaball and Olson's study were willing to accept an administrative position. Even fewer women expected to actually get one: 9% of the beginning teachers in Mason, Dressel, and Bain's study and virtually none of either the practicing or student teachers in Stoke's study.

This is not true of men. Greaball and Olson found that 65% of men were willing to accept a position of responsibility, and Mason, Dressel, and Bain found that 59% expected to achieve one. Seawell and Canady report that almost all of the women who held elementary principalsnips (72%) viewed it as their final goal, while only 39% of men in the same position did so. Thus, even when women aspire to and obtain positions of responsibility, they aspire lower.

One might be tempted to accept the status of women within teaching since, presumably, it is a status of their own choosing. However, there is no evidence that women are less competent than men, and thus a great deal of leadership ability is lost to the educational establishment.

What evidence there is suggests that women function very well in leadership roles. Mickish (1971) found that women principals were liked as well as men principals by both men and women teachers. Men teachers who had worked under women principals actually preferred them to men. Women principals, Mickish found, were preferred by both pupils and their parents. Seawell and Canady review objective as well as subjective evidence which indicates that women actually out-perform men as principals. They report that female principals were more aware of teachers' problems, placed more emphasis on productivity, were more concerned about individual differences and student problems, demanded less conformity, and promoted higher levels of achievement in their students.

We do not mean to imply that women are actually superior to men as educators. There are other, more likely, explanations for these results. First of all, the subjective data may be subject to a contrast effect. Since women principals are relatively rare and the cultural stereotype says that women generally lack leadership and professional ability, the performance of an competent woman may be overestimated (Taynor and Deaux, 1973). A more general explanation is that only unusually competent women are able to circumvent the many personal and social barriers that are erected to their advancement. Since men expect and are expected to be promoted, it takes a lesser degree of professional commitment and ability to succeed. It has often been said that a woman needs to be better than her male counterparts in order to be recognized.

Both of these explanations would predict that as the status of women advances within the profession, this perceived or actual discrepancy would disappear. However, the point to be made is that women can function well in leadership positions within education.

A second reason to be dissatisfied with the status quo is that there is evidence of a change in the desires of women themselves. Stokes found fewer plans to leave teaching for homemaking among students than among practicing teachers. Greaball and Olson found that fewer younger than older women subscribed to the notion that a husband's career is more important than a wife's. More women, particularly married women of childbearing age, are entering the work force. As more women spend more of their time outside of the home, they are likely to be increasingly desirous of equal access to the rewards and demands of professional life.

One purpose of the present study was to see how Toronto teachers here and now feel about their careers. Do they have the same plans to interrupt them for a period of time? What is their level of aspiration? Have women teachers who have aspired to positions of responsibility been denied advancement? These are questions which have been tackled by previous researchers. Our purpose is simply to provide up to date information for our own system.

But there is, in addition, a whole set of questions which previous work has not broached, questions relating to the actual activities of men and women classroom teachers. Looking at this group of individuals from among whom future promotions must be made, do they conduct themselves in ways which are at all different? Do the family responsibilities of women actually interfere with classroom performance? Are women doing fewer of the things that are likely to lead to promotion? Do women view their abilities as being in different areas than men, and do women generally avoid positions of responsibility because they view them as less rewarding.

This study therefore attempts to bridge the gap between women's lesser aspirations on the one hand and their lesser achievement on the

other. What it attempts to discover is how a woman's view of herself translates into professional activities and how these activities facilitate or hinder her chances for promotion.

METHOD

A questionnaire was devised covering all of the above concerns. A copy appears in the appendix. In devising this questionnaire, free use was made of instruments used by Mason, Dressel, and Bain (1959), and by Stokes (1970).

A random sample of teachers was drawn from Board records, both male and female, at both the elementary and secondary level. For both male and female secondary teachers and for male elementary teachers, every third name was selected. Since so many elementary teachers are female, only one out of every sixth name was selected from this group. This procedure produced a total of 1514 names, which should have been approximately equally divided among the four groups. In fact we had underestimated the number of men in the secondary [redacted] the sampling ratio we used was the same for the two sexes, we actually wound up with more men than women. However, this does not bias the results. In addition, questionnaires were sent to all principals and to the 97 people who held academic positions of responsibility in either the area or central offices.

Questionnaires were mailed early in the new year. After a few weeks, a second questionnaire was sent to people who had not replied. Seventy-one per cent of the questionnaires were eventually recovered from elementary and 74% from secondary teachers. The return rate from administrators was 69%. Details of the sample appear in Table 1.

TABLE 1

SAMPLE RETURNS

Group[a]	Number Sampled	Number Returned	Per Cent Returned
Elementary School			
Men	387	286	74%
Women	358	256	72%
Overall	768[a]	542	71%
Secondary School			
Men	447	344	77%
Women	277	210	76%
Overall	746[a]	554	74%
Administrators[b]	97	67	69%

a There were an additional 23 elementary and 22 secondary teachers who did not return their questionnaires and for whom we had no information on sex.

b People who held positions of academic responsibility in either the area or central offices.

RESULTS

Congruence of the Present Study with Previous Research

1. Degree of Experience

As a group, women teachers were generally younger and had less experience in education. Thirty-seven per cent of the female elementary and secondary teachers were under thirty years of age, while only 15% of the men were this young.[1] The largest group of men (45%) were between thirty and thirty-nine years of age. Likewise women had fewer years experience in education. Sixty-one per cent of the women but only 42% of the men had been teaching for ten years or less.

However, there is little evidence of greater mobility on the part of women. It is possible to group people into categories of years of experience -- 1 to 10 years, 11 to 20 years, and 20 or more years -- and look at the discrepancy between their experience with education in general and their years with the Toronto Board. If we do this, we find that 19% of the women and 16% of the men had moved down one or more categories. This discrepancy, although significant, is not very great. Both men and women teachers in Toronto tend to spend their entire career with the same Board.

However, many more women than men have had interruptions in their teaching career -- 46% versus 26%. Furthermore, 14% of the women have had a second and 5% a third interruption; 41% plan a future break. The respective figures for men are 5%, .6%, and 26%. Nevertheless the

---

1 Data from the elementary and secondary panels will generally be combined unless the patterns differ.

discrepancies must be kept in perspective. Not all women had interrupted their careers, and quite a few men had. The real problem is that the breaks from teaching in a man's career are not viewed as real "interruptions" while a woman's are. Of all the past and planned interruptions by men, 56% were for the purpose of studying, while for women, 45% were for maternity or other family reasons. However, since teachers deal with children, it can be argued that experience within the family is as much a contribution to professional development as is an advanced degree.

Overall 69% of the women and 43% of the men have had or anticipate having a break in their careers. This data for women is congruent with the studies of Mason, Dressel and Bain and of Stokes who report figures for women of 70% and 75%. What is perhaps surprising, is the large number of men who also plan to leave for a period of time.

Overall, the Toronto data is congruent with other studies showing that women teachers, on the average, have fewer years of teaching experience than men of comparable age.

2. Role Conflicts

The Toronto study did not include any data on the extent to which a woman's role within the family might have a direct bearing on her commitment to teaching.

3. Level of Aspiration

We did however ask both men and women to what positions they aspired within education. Thirty-two per cent of the women but only 14% of the men hoped to remain within the classroom. Twenty-four per cent of the men and only 5% of the women aspired to be principals; 19% of the men and only 9% of the women aspired to be department heads. However,

virtually equal proportions of men (23%) and women (22%) hoped to attain an administrative position, and more women (12%) than men (3%) hoped to enter special education. This data, although confirming that women have lower aspirations than men, is vastly different from the picture drawn by previous research. Many more Toronto women aspire to positions of responsibility than one might expect, a full 68%. This compares to the 9% reported by Mason, Dressel and Bain, and Stoke's figure of virtually 0%.

This change can be ascribed to two possible reasons. Toronto, as a urban centre, may attract or produce a more ambitious type of individual. The discrepancy may also reflect a real change in women's aspirations over the last few years. Whatever the explanation, the Toronto Board certainly has a vast pool of women with high aspirations upon whom it can draw for positions of responsibility.

A Model of Career Development

Once a person has entered a career, his or her advancement can be seen as dependent on a series of factors some of which are internal to the self and some of which are external. The first factor might be called "Paper Credentials." Paper Credentials include the formal qualifications for entry to a career as well as the years of actual experience on the job. These constitute the objective facts about a person's level of job preparation, and represent a codification of what might be expected from them in terms of job performance.

The second factor is "Job Performance." Job Performance represents the degree of effort and skill with which a person carries out

his or her assigned tasks. If formal qualifications for entry to a job have any validity, we would expect them to be reflected in performance. We would also expect people to become more adept at their work with increasing experience. To some extent therefore, "Paper Credentials" should influence "Job Performance" (see Figure 1).

The third factor is "Encouragement." People who advance in their careers have often received encouragement from their family, their colleagues, and their superiors. To some extent, at least, we would expect the degree to which teachers are encouraged to depend on their level of Job Performance. Poor performers should receive less encouragement than good performers. This is a chain reaction, with Paper Credentials affecting Job Performance, and Job Performance affecting Encouragement. However, Encouragement should also be affected directly by Paper Credentials. People who have more degrees and experience should receive more encouragement than those who have less.

Encouragement, in turn, plays an important role in determining who actually applies for promotion. In addition we would expect that an individual would also take his or her past Job Performance and Paper Credentials into account. At this stage a new factor enters -- "Occupational Values." Occupational Values represents the things people want out of life, and their view of the extent to which various positions are congruent or incongruent with these goals. Of course, values themselves have a long history and are dependent on a host of personal and social factors. However, we will not be concerned with how people come to hold the values that they do, but only with the effect of these values on the promotion process. Occupational Values have a direct effect on who applies for promotion. A person will not apply, even though encouraged, if the position is not attractive.

Finally, applications, if accepted, lead directly to promotion. We would expect that administrators, in deciding which applications are successful, would take past Job Performance and Paper Credentials into account.

There is a second route to positions of responsibility. Job Performance can bring not only Encouragement, but direct "Offers" of promotion as well. We would expect Offers to also be affected by Paper Credentials as well as Job Performance.

This series of factors and their effect on one another is diagrammed in Figure 1. Earlier factors influence later factors both directly and indirectly. Direct effects are represented by arrows. Thus, Paper Credentials influence Job Performance, Encouragement, Applications, and finally Promotion. Job Performance affects Encouragement, Applications, and Promotion. Encouragement and Occupational Values influence Applications, and Applications affect Promotion. Indirect effects are those resulting from the cumulative action of the various factors. For example, Encouragement is affected indirectly by Paper Credentials because these influence Job Performance, which in turn affects Encouragement directly.

As can be seen in Figure 1, "Sex" also affects each of these factors. Sex may first of all influence the accumulation of Paper Credentials. We have already seen that women have less experience than men relative to their age and more interruptions in their teaching careers. Female teachers, it has been shown, view their primary role as that of a wife and mother. This role conception may affect their accumulation of degrees and certificates. and the objective demands of that role are certainly responsible for their interrupted careers.

The direct affect of Sex on Paper Credentials would have an indirect and cumulative affect on Job Performance, as well as all the

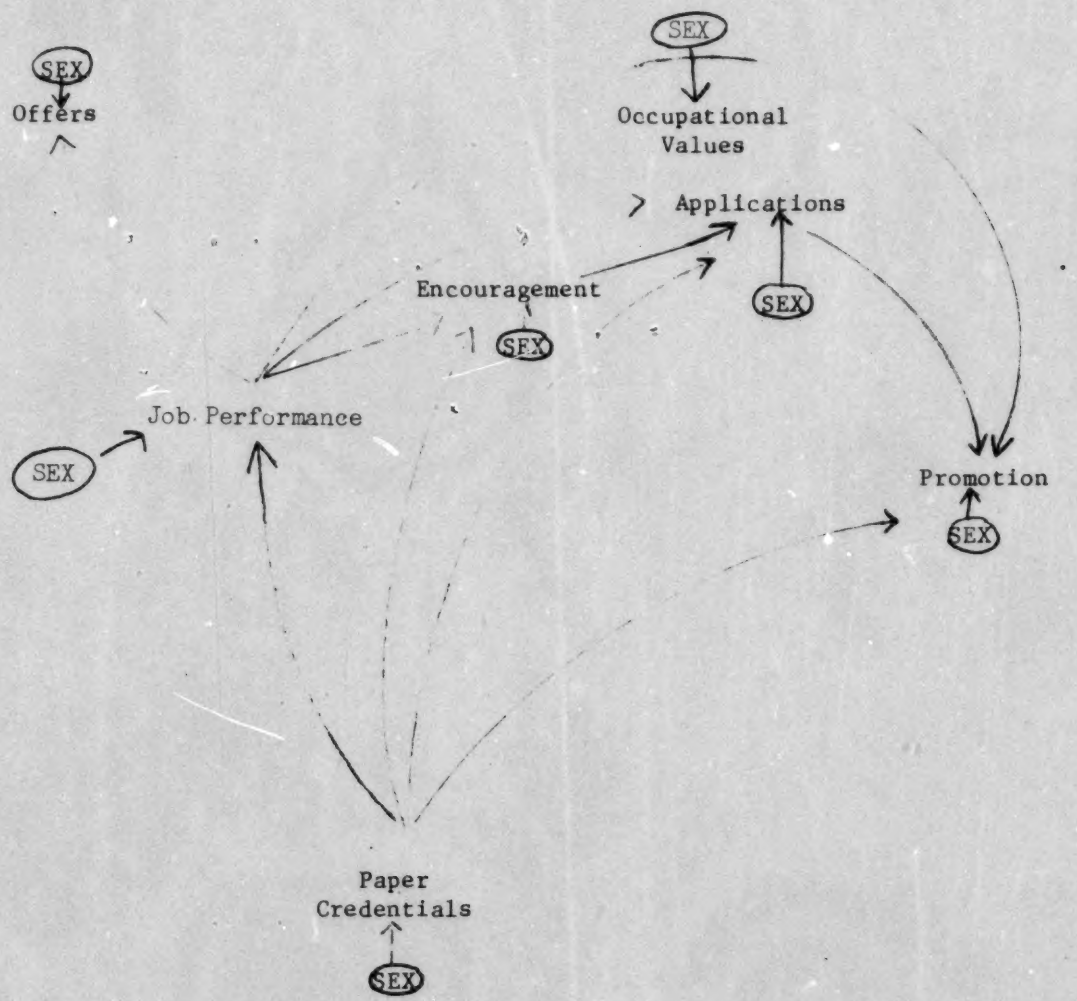

Figure 1. A MODEL OF CAREER DEVELOPMENT

other stages of career development further down the line. But Sex may have an additional, direct affect on Job Performance. The same role conception which limits the level of preparation a woman attains, may also limit the degree of effort she expends on the job or her ability to perform at a high level.

Sex may also have a direct effect on Encouragement. It is possible that, regardless of Job Performance and Paper Credentials, women may be encouraged in their careers to a lesser extent than are men. The previous effects of Sex on Paper Credentials and Job Performance are due to the view that a woman has of herself as well as to the external demands that society places on her. If Sex has an independent effect on Encouragement, it is due to differential expectations which people have of men and women which causes their contributions to be differently perceived.

Sex may also affect Occupational Values. Different socialization may have caused men and women to adopt different goals, which will affect their rate of applications. Sex may affect applications directly in that women may be more reluctant to apply for promotion, even when all other things are equal. These two effects of Sex are also due to a woman's internal conception of her role.

The final two possible effects of Sex are again external ones and reflect different expectations which people may have of men and women -- this is the possibility that Sex influences Promotion directly through the success of Applications or through Offers of position. What this would mean is that even women who have prepared themselves, who have performed at a high level, who have been encouraged, and who have

applied for promotion are still discriminated against in the distribution of positions of responsibility, and that even well qualified, highly skilled women are less often offered responsible posts.

Thus, we have outlined a multi-stage model of career development in which Sex is viewed as being a significant factor at every stage. This model is theoretical. We hope, through statistical means, to disentangle the multifacted effect of Sex on career development and see which operations are supported by fact. The end result should be a clearer picture of how women and men teachers arrive where they do, and where the school system might be able to intervene to make the end result a more equitable one, and thus make the most efficient use of the huge pool of feminine resources that is available to it (see footnote 1 in Appendix B for an outline of the variables to be considered).

1. The Effect of Sex on Paper Credentials

As has been mentioned above, (page 9) Toronto women teachers are younger as a group than are men, and, even when of comparable age, have fewer years experience in education because of interruptions due to maternity. However, these differences should not be exaggerated.

Throughout this discussion we will be continually referring to something called the "proportion of variance accounted for." This is a statistical term which can be given a relatively simple common sense interpretation. A more familiar statistical term is "statistically significant." Now it is important to realize that when we say that some difference between two groups is statistically significant, we are not talking about the size of the effect, but only its "reliability." A reliable difference is one which we would likely find again if the study were repeated. To say therefore that a difference between two groups

is reliable, means that we have discovered something that is true about the real world and not merely stumbled upon some chance variation.

However, reliable differences can be very small, particularly if the sample size is large. In the case of this study which has a large sample size, it is possible to uncover a statistically significant difference which, because of its small size, has little practical significance. Practical significance is better assessed by the proportion of variance accounted for.

If you measure or assess people on just about anything, you will discover individual differences. If you try to relate some variable, like Sex for example, to these differences, you may discover that men as a group are significantly different from women. Proportion of variance accounted for tells how much of the total amount of individual difference is due to Sex, and this will vary depending on what is being measured. If, for example, we took measurements of running speed and mechanical aptitude we would likely find a significant difference between men and women on them both. However, it is also likely that Sex would account for more of the variation in running speed than it does in mechanical aptitude. This would likely be so because running speed is solely dependent on physique (and men genetically have stronger muscles) and on amount of training (and men in our society spend more time in physical activities), while mechanical aptitude varies with a whole host of factors, not all of which give an advantage to all men over all women, e.g., general intelligence, technological level of the culture, the availability of specialized training, etc.

Proportion of variance accounted for varies from 0 to 1.0. A very familiar statistic in educational research is the correlation coefficient, which also varies from 0 to 1.0. However, the correlation

coefficient and the proportion of variance accounted for are not the same thing. Rather the square of the correlation coefficient (r^2) gives the proportion of variance accounted for.

If a researcher obtains a correlation coefficient of .80, he would likely be very happy and consider that he had discovered an important effect. However, even so only ($.80^2$) of 65% of the variance would have been accounted for. Correlation coefficients of .40 or .30 are more usual in the social sciences, and effects of this magnitude are accounting for less than 20% and 10% of the variance, respectively,

In attempting to predict who will and who will not be promoted, we have a peculiar problem. This is the fact that most people in schools are not in positions of responsibility. If someone picks a school employee at random, and asks me to bet whether or not she/he is a classroom teacher, my best odds lie in betting that she/he is, since that is what most people employed by school systems are. The fact is that most men in school systems are classroom teachers. When we talk about teachers who have been promoted to positions of responsibility, we are talking about a relatively small group.

In the case of this study, 33% of the sample were in positions of responsibility.[2] The figure for men is 45% and for women 18%. This seems like a large difference, but in terms of predicting variance, what we are talking about is explaining why 12% more males than expected are

---

2 This is a fairly large group. However, this sample figure does not mean that 33% of all academic staff in Toronto have such positions. This is because questionnaires were sent to <u>all</u> staff at the level of principal or above, and personnel below that level were merely sampled. It is also possible that people in positions of responsibility were more likely to return their questionnaire. It is also possible that they were less likely to do so.

in positions of responsibility and why 15% more females are not. So there are constraints as to how much we can account for by Sex (see note 2, Appendix B).

Now to return to the effect of Sex on the attainment of paper credentials. We noted that women were younger, had fewer years experience in education and more frequently than men had interruptions in their careers. However, these differences are not at large as one might expect, at least not to the extent of allowing us to accurately categorize a person on the basis of Sex alone. Sex accounted for only 1.9% of the variance in age, 2.1% of the variance in years of experience in education, and 2.2% of the variance in years of experience with the Toronto system. Sex was more important with regard to interruptions -- 4.6% of the variance accounted for (see note 3, Appendix B).

We also looked at the discrepancy between years of experience in education in general and with the Toronto system in particular. We thought that women might tend to move more often from place to place as they followed their husbands' careers. However, this was not the case; there were no differences by Sex on this variable.[3]

There were differences by Sex in educational attainment; however, these again were not very large. More men than women had earned bachelor's or graduate degrees (82% vs 69%) and more men than women held a specialist certificate (60% vs. 50%). However, more women than men were currently pursuing a degree or certificate (30% vs. 38%). These differences, however,

---

3 The "Moving Index" was calculated as the number of years experience with Toronto over the number of years experience in education in general. Years experience was coded into 3 categories: 1) 1 to 10 years; 2) 11 to 20 years; 3) 20 years or more. Thus the moving index had 3 possible values: .33, .67, 1.00. The failure to find a difference by sex may be due to the use of such a limited index.

are partially due to differences in age and years experience in education. When these are taken into account, Sex accounts for 1.3% of the variance in degrees, .4% of the variance in certificates, and there are no remaining difference due to Sex in the number who are currently studying (see Table 4B in Appendix B).

2. The Effect of Sex on Job Performance (see note 5 in Appendix B)

It is reasonable to suppose that Paper Credentials affect Job Performance. At least we might hope that teachers would become more skilled at their jobs as they accumulate experience and take advanced training. If women are behind men in the possession of Paper Credentials, we would expect their Job Performance to suffer according. But is there any additional effect for Sex, once the effects of Paper Credentials has been accounted for.

The first index of Job Performance we called Hours, and it is the self reported number of hours per week spent on the job outside of the classroom. In general, most teachers spent from 6 to 15 additional hours. Teachers with degrees tended to spend more time than average. This was a fairly important effect, accounting for 4.9% of the variance (see Table 6B.1 in the Appendix). Sex also had an effect, with men spending more additional time on the job than women. However, the effect of Sex was less important than the effect of degrees -- only .9% of the variance was accounted for.

Another measure of the effort put into teaching is the number of assignments undertaken in addition to those required for the classroom (see Table 6B.2 in the Appendix). It is interesting that teachers who

were currently pursuing a degree or certificate were more active than those who were not (1.5% of the variance), as were people who already had degrees (1.1% of the variance). Teachers who had more experience in the system were more active (1.0% of the variance), but of teachers with equal experience, the younger ones were more active (2.3% of the variance). A puzzling finding is that teachers who had had a break in their career were more active (1.4% of the variance). Finally, there were effects for Sex, with men undertaking more extra assignments than women (2.1% of the variance).

Table 2 lists the activities and indicates the percentage of men and women teachers who participated in each during the past year. Overall we have seen that men were more active than women, but an examination of Table 2 shows that this was not true across the board. Although men tended to be more active than women in all areas, the differences were generally only significant in those areas of a more administrative nature: fund raising, special programme days, and administration. The one exception was sports, where men were also significantly more active than women. Women were not significantly less active in areas involving direct contact with pupils: extra tutoring, extracurricular activities, and planning field trips. Women were also not significantly less active in professional development activities and professional associations.

Teachers were asked to evaluate their own effectiveness in a variety of situations. Three of the situations represent the ability to work directly with students in the classroom: keeping students under control, stimulating student interest in the subject matter being taught,

TABLE 2

PER CENT OF MEN AND WOMEN TEACHERS
ACCEPTING VARIOUS ASSIGNMENTS IN ADDITION TO
DIRECT CLASSROOM RESPONSIBILITIES

Assignment	Men	Women
Extra academic work with pupils outside of class	51.7	51.3
Sports	49.9	31.3*
Extracurricular drama, music, etc.	35.1	32.7
Fund raising	36.5	24.4*
Professional development	63.1	60.8
Special programme days	48.9	41.8*
Planning for field trips	58.4	53.1
Professional activities (e.g. T.T.F.)	34.8	30.3
Administrative responsibilities	47.4	23.8*

* Difference between men and women is significant by χ^2 at or beyond the .05 level.

and meeting individual student needs. Five situations represent ability of a more administrative nature: working with parents, working with staff, developing school goals, working with other administrators, and working with community groups.

Teachers evaluated their effectiveness in each of these areas as either high, medium, or low. Points were assigned -- high - 3 points; medium - 2 points; low - 1 point -- and composite scores were calculated for both classroom and administrative effectiveness.

Classroom effectiveness was not influenced by Sex. The other variables exerted effects which are difficult to interpret. People with degrees perceived themselves as less effective (3.4% of the variance), as did people with more years experience in the Toronto system (3.2% of the variance). Teachers who held certificates (.3% of the variance) or who had additional years experience outside of Toronto perceived themselves as more effective (see Table 6B.3 in the Appendix).

This pattern of results is different from what has been shown with other indices of Job Performance, both the ones that have been discussed as well as those still to be presented. We are thus led to question the validity of this self report data. However, we tend to feel that the finding of no Sex differences is a valid one, since there is little difference between men and women even on the raw data. Significantly more women than men perceive themselves as high in their ability to meet individual student needs (71% vs. 66%), but this difference is small, and there are no differences in the other two areas included under classroom effectiveness (see Table 3). Thus we conclude that there are essentially no differences in the ability of men and women teachers to work with students.

There are differences, however, in perceived administrative effectiveness. Men outperform women in every category queried. This is true even after correction is made for Paper Credentials. However, after Paper Credentials are taken into account, the difference due to Sex shrinks to .4% of the variance. Having a degree (1.6% of the variance), studying (.2% of the variance), and years with Toronto (7.7% of the variance) are also important (see Table 6B.4 in the Appendix).

TABLE 3

PER CENT OF MALE AND FEMALE TEACHERS
RATING THEIR EFFECTIVENESS AS HIGH IN
VARIOUS CLASSROOM AND ADMINISTRATIVE TASKS

Task	Men	Women
Part A -- Classroom Effectiveness		
Keeping students under control	69	70
Communicating and stimulating pupil's interest in the subject matter	64	66
Working with students and meeting their needs	66	71*
Part B -- Administrative Effectiveness		
Working with parents and parent groups	40	31*
Working with fellow staff members	65	59*
Identifying and developing school goals	35	28*
Working with school administration	52	40*
Working with community groups	19	10*

* Difference between men and women is significant by χ^2 at or beyond the .05 level.

Teachers were asked whether or not they had introduced any innovations into the schools in which they had taught over the course of their teaching career. Various areas were named, and if a teacher had been innovative in any area, (s)he was asked to indicate whether the innovation had been a major or a minor one. An index of innovation was computed by assigning one point for a minor contribution and two points for a major one. If no contribution had been made in an area, zero

points were earned (see note 7, Appendix B). This data seems clearer than the data on perceived classroom effectiveness. Overall, 75% of the teachers felt that they had been innovative in one or more areas.

Degrees again were important (see Table 6B.5 in the Appendix). Teachers who had degrees were more innovative than those who did not. This was an important effect which accounted for 9.1% of the variance. Teachers currently pursuing a degree also made more contributions, but this effect was smaller (.6% of the variance).

Number of years with Toronto accounted for an additional 11.7% of the variance. Age had a significant, but very small effect (.06% of the variance), but in the opposite direction. Taken together, these two findings indicate that experienced teachers were more innovative, but looking at teachers of equal experience, the younger were found to be making more contributions.

Finally, Sex again had a small effect. Overall, 81% of the men but only 66% of the women felt that they had been innovative. Men reported being more innovative than women in all areas but one (see Table 4). However, when prior differences in Paper Credentials are taken into account, sex only accounts for 1.8% of the difference in innovativeness among teachers.

Overall, having a degree emerges as a consistently important factor in Job Performance. This factor accounts for a significant proportion of the variance in all five measures. Being currently engaged in a course of study is significantly related to three measures of Job Performance. Years experience in the Toronto system is a factor in four of the five measures. The other variables have only scattered effects.

We have seen that women less often have degrees and have fewer years experience than men. On this basis alone we would expect their Job Performance to suffer, Sex thus has indirect effects on Job Performance. However, Sex has direct effects as well; on four of the five Job Performance variables, men are seen to out-perform women even after prior differences in Paper Credentials have been taken into account.

TABLE 4

PER CENT OF MEN AND WOMEN TEACHERS
REPORTING INNOVATIONS IN VARIOUS AREAS OF EDUCATION

Area of Innovation	Men	Women
Subject matter	59	41
Teaching methods	51	41
Techniques of evaluation	29	19
Extra-curricular activities	48	29
Out-of-classroom educational Experiences	39	22
Classroom grouping	23	20
Parent programmes	17	14
Community programmes	18	8
Overall	81	66

When men and women are looked at separately, there are scattered differences in the effect of various Paper Credentials on Job Performance. However, there are no consistent trends. Overall, what increases a man's performance is beneficial to a woman's (see Table 8B in the Appendix).

Not all of the lesser performance shown by women can be attributed to the problems of child rearing. The number of dependents a woman has, has no effect on the number of hours she spends on the job or the number of extra assignments she undertakes. Responsibilities to

dependents does affect her innovative contributions (1.4% of the variance), and her perceived administrative effectiveness (.8% of the variance). Aside from child care, the mere fact of being married has no effect on any aspect of Job Performance. Men's Job Performance is unaffected by either marriage or dependents.[4]

3. The Effect of Sex on Encouragement

Teachers were asked whether or not they had "ever been encouraged to apply for promotion to a position of greater responsibility." Overall 50% said that they had been so encouraged, with a difference by Sex: 59% of the men, but only 38% of the women (χ^2=49.54, contingency coefficient = .202). Teachers who had received such encouragement were asked from which of the following sources it had come -- co-workers, friends, family, vice-principal, principal, area superintendent, or other supervisory or administrative official -- and were given one point for each source. The total score represents, in a crude way, the amount of encouragement they received. Women less often received encouragement from each source than men (see Table 5), and their scores therefore are consistently lower.

However, we would expect some of this difference to be due to the superior Job Performance of men as well as their greater number of Paper Credentials. And we find that this is indeed the case (see Table 9B in the Appendix). Fairly substantial proportions of the variance are accounted for by extra assignments (5.1% of the variance), and degree of innovativeness (11.2% of the variance), although, number of hours worked did not have a significant effect, nor did perceived classroom or administrative effectiveness.

4 There is an effect for dependents (.7%) on perceived effectiveness in the classroom. But as with the other variables affecting this measure of Job Performance, it is in a negative direction, and difficult to interpret.

TABLE 5

PER CENT OF MEN AND WOMEN TEACHERS
RECEIVING ENCOURAGEMENT FROM VARIOUS SOURCES
TO APPLY FOR PROMOTION

Source	Men	Women
Co-workers	38	24*
Friends	22	14*
Family	21	14*
Vice-Principal	20	9*
Principal	38	21*
Area Superintendent	11	6*
Other supervisory or administrative official	16	12*

* Differences between men and women are significant by χ^2 at or beyond the .05 level.

Paper Credentials also had an effect over and above Job Performance. Having a degree was important, accounting for 2.6% of the variance. Years experience played a complicated role. People with more experience in Toronto were more likely to be encouraged (1.0% of the variance), but having additional experience in other systems actually seemed to be a disadvantage (.3% of the variance). To see what this means, imagine that there are two people who have equal experience in the Toronto system, but one has additional years experience in another system. The person with additional experience would be less likely to receive encouragement than the one who has spent all his/her years locally. This is true even though the second person has fewer years total experience in education. This was true for both men and women. Age also had a slight depressing effect (.1% of the variance).

Sex had a significant effect over and above these differences, with women receiving less encouragement than men. However, the effect is relatively small (see Table 9B in the Appendix). One might suppose that women are more likely to be neglected if they have children, but this is not the case. The number of dependents a woman has or the mere fact of her being married has no effect on whether or not she receives encouragement to apply for promotion. Men however, receive somewhat more encouragement if they have dependents (1.1% of the variance, see Table 10B in the Appendix).

4. The Effect of Sex on Applications

Far fewer women then men apply for positions of responsibility (54 vs 23%).[5] This is true for all the positions we investigated: consultant, department head, vice-principal, principal, administrator.

There are, undoubtedly, many factors responsible for this difference. In addition to the ones we have discussed to date -- Paper Credentials, Job Performance, Encouragement -- a new factor is relevant. This factor is the personal values that people hold with respect to jobs, and the extent to which they view teaching versus administration as congruent with these values. As a group, there were differences between men and women in the job values they held and in their perceptions of the two types of positions. This might account for the differential rate of application.

It is useful to divide job values into two types: intrinsic and extrinsic. Intrinsic values are those which are satisfied in the performance of the job itself. We asked about seven intrinsic values -- working with people, being helpful, using special abilities and aptitudes,

---

5 $\chi^2 = 111.96$, contingency coefficient = 0.30

being creative and original, being free of supervision by others, exercising leadership, and having adventure. Extrinsic values are those satisfied by the rewards society gives for performing a service. We asked about four -- money, social status, security, and spending school holidays with one's family.

The first ten of these values were used in the study by Mason, Dressel, and Bain in which beginning teachers were compared to other professionals. The eleventh value is one we added because it has a particular relevance to teachers. For each value, teachers were asked to indicate if it was of high, medium, or low importance to them.

Provided that the occupational level is the same, women and men typically do not differ in the satisfactions they derive from their work (Centers & Bugental, 1966). However, we found differences between men and women in our study, although they were scattered.

Perhaps surprisingly, the women were found to be more concerned with money. There was no difference between men and women in concern with status or security. Surprisingly, it is the men who were more interested in spending vacations with their families, although this difference was small (see Table 6). There were few differences in intrinsic values. Women were somewhat more interested in working with people, and men were more concerned with exercising leadership.

There were likewise few differences in how well -- high, medium, or low -- men and women teachers perceived these values to be satisfied within the classroom. Women perceived the money and status of classroom teaching to be more satisfactory. This may be because women have fewer financial responsibilities or that because teaching is well rewarded compared to the other options which are generally available to women.

Men perceived teaching to be somewhat more satisfactory in satisfying the value of helping others.

However, women differed from men in their perception of how well almost all values were satisfied in an administrative position. On all four extrinsic values, the women perceived these positions to be more satisfying. There were no differences with regard to the intrinsic values of leadership and adventure. But women perceived administrative positions to be higher on freedom and lower on use of aptitudes and originality.

TABLE 6

PER CENT OF MEN AND WOMEN TEACHERS JUDGING VARIOUS VALUES TO BE HIGHLY IMPORTANT TO SELF AND TO BE HIGHLY SATISFIED IN CLASSROOM TEACHING AND ADMINISTRATION

Value	Importance to Self		Satisfied in Classroom Teaching		Satisfied in Administration	
	Men	Women	Men	Women	Men	Women
Work with People	81	87*	83	82	60	48*
Be Helpful	74	69	76	69*	61	52*
Money	11	23	4	13*	35	54*
Status	5	7	3	6	32	52*
Security	34	33	31	29	41	50*
Vacation with Family	35	29*	58	58	29	35*
Use Abilities	73	76	55	54	48	42*
Be Creative	56	62	50	50	34	30*
Be Free	39	44	39	43	26	35*
Exercise Leadership	47	42*	38	38	68	72
Have Adventure	21	23	16	18	18	20

* There is a significant difference between men and women by χ^2 at or beyond the .05 level.

Overall, it is interesting to observe that classroom teaching was perceived as more satisfying than administration. Administration was only perceived as being more satisfying than teaching with respect to those values which were viewed as relatively unimportant -- money, status, security. A total index of satisfaction with teaching was computed by assigning scores as follows: high - 3 points, medium - 2 points, low - 1 point, and weighting the score for classroom satisfaction by how important the value was to the self. This was also done for satisfaction with administrative positions. The overall average score for teaching was 36.7 and for administration 34.3. Men and women did not differ on the evaluation of classroom teaching. However, women had lower scores than men on the perceived satisfaction to be gained from administrative positions. However, the effect was small (.7% see note 11 in the Appendix).

Irrespective of these differences, however, values were not a factor in who applied for a job. As a measure of Application, we counted the total number of applications that had been made for all positions. Degree of encouragement was very important in determining who applied (19.2% of the variance, see note 12 in the Appendix). Job Performance had an effect, but not on all measures. Number of hours worked, classroom effectiveness, and degree of innovativeness did not affect who applied over and above the effect of these variables on who was encouraged to apply. Perceived administrative effectiveness, however, did influence who applied.[6] Paper Credentials were important. People

---

6 There was an effect for number of extra assignments undertaken, but it is a small effect (.005%), and difficult to interpret because it is in a negative direction.

with degrees (3.6% of the variance) and certificates (1.7% of the variance) were more likely to apply. Finally there was an effect for Sex (2.5% of the variance), with women less likely to apply than men.

Looking at men and women separately, there are some differences from the general picture (see note 13 in the Appendix). For men, the picture is as described above: applications are affected by encouragement, perceived administrative effectiveness, degrees and certificates. In addition, men who have had a break in their career are more likely to apply, as are men with more dependents. For women, breaks and dependents have no effect. Neither does the fact of being married. Administrative effectiveness does not influence a woman to apply, but degree of innovativeness does (4.6% of the variance).

5. The Effect of Sex on Promotion

Finally we come to the effect of Sex on promotion itself. To what extent is promotion influenced by all the factors that have been discussed (see note 14 in the Appendix). As our measure of promotion, we simply indicated whether or not a person occupied a position of responsibility. This was rather broadly defined to include consultants, assistants and full department heads, vice-principals, principals, and administrators.

The most direct influence on promotion is number of applications. This accounts for 24.5% of the variance. Actually, applications are even more important than this analysis suggests, since very few people are offered positions directly, and most people in positions of responsibility have applied at least once. However, some people are successful on the first try, and others must make several applications before being successful.

Job Performance is important in determining the success of applications. People who have been promoted have been more innovative (4.0% of the variance), and have been more effective in administrative tasks (3.5% of the variance). They also work more hours (1.9% of the variance), however, this may be a result rather than a cause of their promotion. Two results with Job Performance are difficult to explain. People who have been promoted are less effective in the classroom (1.7% of the variance), and they undertake fewer extra assignments (.05% of the variance). The classroom effectiveness measure has behaved inexplicably before, and we may wish to discount it again. However, another explanation is that people who have been promoted are more aware of the difficulties involved in teaching. As to the fewer number of extra assignments undertaken, it is likely that people who are already in administrative positions find that they have not time for voluntary work. It may also be that what is an extra assignment when one is a teacher is viewed as a mandatory part of the job when one holds a position of responsibility.

Paper Credentials continue to affect promotion in their own right even after Job Performance has been taken into account. People with degrees (3.3% of the variance) and certificates (.6% of the variance) are more likely to be promoted, as are people who have been more years with the Toronto system (7.8% of the variance). Once again we discover a tendency for people from other systems, even though they have equivalent Toronto experience, to have more difficulty being promoted.

Finally there is an effect for Sex. Women, even those who apply with equivalent Job Performance and Paper Credentials, are less likely to be successful than are men. However, the effect is small

(.6% of the variance). We again find that men with children are more likely to be promoted (.5% of the variance). Marriage, however, works against a woman. Married women, even all other things being equal, have less chance of promotion than single women (.5% of the variance, see note 15 in the Appendix).

6. The Effect of Sex on Offers of Promotion

Sex has no direct effect on offers of promotion. Factors which are important are number of hours worked (3.7% of the variance), innovativeness (6.7% of the variance), having a degree (1.3% of the variance), years in Toronto (7.7% of the variance), and age (.3% of the variance; see note 16 in the Appendix).

7. Women Who Have Been Successful

What about the women who have been successful. Our sample included 87 women in positions of responsibility -- consultants, department heads, assistant department heads, vice-principals, principals, administrators. In terms of Paper Credentials, these women were older and had more experience in education and in the Toronto system than had the men in comparable positions, of whom there were 303. Most (69%) of the women were unmarried, compared to relatively few (14%) of the men.

These women had performed at as high a level in terms of their perceived effectiveness in the classroom and in administration, and their degree of innovativeness. However, the men had undertaken more extra assignments ($t=3.50$) $p<.001$. There was no difference in the degree of encouragement they had received.

Although all of these people were currently in positions of responsibility, the men had occupied more such positions than the

women, ($t=3.28$, $p<.001$). However, this was because the men had made more applications, an average of 1.8 vs. 1.1 ($t=3.89$ $p<.001$). There was no significant difference between men and women in the proportion of applications that had been successful (.52 vs. .49). The fact that the women had held fewer positions of responsibility, therefore, is due to the fact that they had applied for fewer. This was in spite of the fact that they were, on average, older than their male counterparts.

In fact, everything seems to have occurred more slowly for these women. It is important to note that, although they were older than the men, they have not attained a higher level of Job Performance. They had received equal encouragement as men, but this had occurred at a later point in their life. We might say that they are late bloomers. The reason that their careers took off at all may be related to the fact that most of them are single. It looks as though it is only after it becomes apparent to herself and others that a woman is unlikely to marry, that both she and others will see her as a potential leader.

It is also important to note that most of these women, although classified as administrators, were in lower level positions than the men. Most of them were assistant department heads or consultants, while the men were principals and central office administrators. Thus, although they had attained equal Job Performance, their careers had not gone as far.

SUMMARY OF SEX EFFECTS

This study has uncovered limitations in advancement due to sex all along the path of career development. Sex, first of all, affects the accumulation of Paper Credentials (degrees and experience) and then Job Performance. Sex influences the degreee of Encouragement a woman receives to apply for promotion, and the number of Applications she will actually make. Finally, Sex influences the likelihood of her being Promoted. Although Sex had some effect on Occupational Values, values were not found to affect Applications. Sex was also not a factor in direct Offers of promotion.

All of these effects due to sex, considered singly, are relatively small. However, sex operates at all points in the development of a teacher's career, and the effects are, therefore, cumulative.

We can divide the six effects of sex into those which are internal to the women herself, that is her conception of her own role, those which come from the larger society, and those which inhere in the school system. The effect of Sex on Paper Credentials is largely due to factors external to the school. It is a woman's view of herself which affects her accumulation of degrees, and the demands of maternity which restrict her accumulation of years of experience. These same forces restrict her Job Performance. Family responsibilities limit the number of hours she can spend on the job and the number of extra assignments she can undertake, and perhaps her ability to develop new approaches to her job in the classroom. Innovativeness in the classroom may also be affected by a woman's view of herself, and self perception

certainly plays a role in perceived administrative effectiveness. Horner (1969) has shown that women tend to actually fear success, and that men tend to resent successful performance in a woman. This is a powerful psychological barrier to the type of performance that will result in distinction.

Our analysis suggests that these forces, which are internal to the woman and which inhere in her role as a wife and mother, have the larger effects. However, forces within the school system also operate, so that a woman receives less Encouragement and less often sees her applications being successful. These effects appear relatively small. However, because forces external to the school system have reduced the pool of women available for encouragement and promotion, the existence of sex discrimination within the system, however minor, results in large discrepancies in the number of men and women who actually receive promotion.

Furthermore, Encouragement may also play a role in the accumulation of Paper Credentials and in Job Performance. Men may receive more encouragement to earn degrees, to undertake additional assignments, and to be innovative. Men may more often be praised for undertaking administrative tasks. These are facets of Encouragement from within the system that we have not attempted to evaluate.

It is also clear that the effects of discrimination feed back into the start of the career cycle. The educational system, as a system, is part of the larger society. We know that society leads people to view different occupations as being differentially suitable for men and women. This has been shown for college students (Epstein and Bronzaft, 1974), for pre-adolescents, (Schlossberg and Goodman, 1972),

and even for young children (Looft, 1971). Part of this "message" is communicated inadvertently by the fact that certain positions are filled by men and others by women. It has been shown that the attractiveness of an occupation to boys and girls depends, in part, on the sex of the incumbents (Plost & Rosen, 1974). Thus, the existence of discrimination within the school system, not only affects women who do apply for promotion, but helps reinforce the view that women are not candidates for outstanding professional performance. This, in turn, is partly responsible for the fact that women teachers do not prepare themselves or apply for positions of responsibility, as well as for the fact that young women in general have a limited view of their potential.

If the school system truly wants to utilize the potential of women, it must take steps to overcome the initial socialization which a woman has encountered before her first day in the classroom, and which continues to affect her performance throughout her career. The key to the whole process is right at the very beginning. The largest effects are at the beginning, and these effects reverberate all down the line.

Let us try to trace these effects with a hypothetical group of 100 beginning male and 100 beginning female teachers.[7] Our data show that 46% of the women and 26% of the men will have interrupted careers. Thus, in terms of accumulated experience, 46% of the women are behind and only 26% of the men. Thus, of our initial pool of 100, 54 women and 74 men have not jeopardized their chances for promotion. Eighty-two per cent of the men but only 69% of the women have earned degrees. The pool of men available for promotion is now 61, but only 37 women remain. Eighty-one per cent of the men and 66% of the women feel that they have been innovative; promotion pool reduced to 49 men and 24 women. Fifty-nine

---

7 While technically this is an incorrect application of the percentages reported in the results it does illustrate the cummulative process which the data demonstrates.

per cent of the men and 38% of the women have been encouraged to seek promotion. The pool is now 29 men and 9 women. Fifty-four per cent of the men and 23% of the women will apply for promotion. The pool now from which promotions must be made is 16 men and 2 women.

Eliminating promotion prejudice will help only those 2 women who have managed to "keep all other things equal." Encouraging women to apply will help the 13 who did not apply. Encouraging women to aim for distinctive performance will help the 13 who were not innovative. But encouraging women to earn degrees will help 17, and enabling them to have uninterrupted careers will help 46.[8]

Can the school system help women accumulate years of experience at the same rate as men? Maternity and family responsibilities are not under a Board's control, and no one wants to suggest that a Board of Education should interfere with the family life of its staff. However, there are ways to lessen the impact of leaving the classroom for several years.

One is by making part-time work more available. In another study recently completed by the Board, it was shown that there is a noteworthy degree of interest in part-time work among the non-teaching staff of the Board. Interest was especially high among professional women - reaching to over 50%. Another possibility is day care. No one knows how many women might remain in teaching on a full-time or part-time basis if reliable day care services were more readily available.

But an important part of the solution is attitudinal. When a woman becomes pregnant, does her principal automatically assume that she will be leaving? When a man or a woman takes a leave of absence to pursue a degree, he or she probably does so with the blessings of the supervisor.

---

8 Again these figures illustrate the process and should not be interpreted as correct since the statistical details are far more complex.

What is the system's attitude toward pregnant women? Do staff attitudes and the current system of fringe benefits and maternity leave provisions encourage a woman to continue thinking of herself as a professional employee?

This whole area of family responsibilities is a difficult one, fraught with many ethical and practical problems. Encouraging women to earn degrees and to aim for high levels of performance is far simpler. There appear to be no difficulties in the classroom performance of women. Even women who are younger, and have been teaching for fewer years than men, are equally effective as men in dealing with students. The problem arises in introducing new techniques into teaching, and in assuming extra responsibilities of an administrative nature. Women less often do these things, and they perceive themselves as less effective in these areas. This is an area where women need to be encouraged, because these are the activities that lead to promotion, Women also need to be encouraged to continue their education. In view of the fact that many women will leave the classroom for a time, it may be important to encourage women to start on additional degrees as early in their careers as possible.

Women also need to be encouraged to apply for promotion. But another possible area of attack is direct offers of promotion. Most people are promoted as a result of successful application for a job. However, sometimes direct offers of promotion are made without the person having to apply. Since even well qualified women are less likely to apply for promotion thanequally qualified men, one might think that women would have received more direct offers of promotion than would men. However, this was not the case. Clearly the system needs to take a more

active role in identifying potential candidates for advancement and encouraging them to apply.

Finally, care must be taken at the final step to insure that women and men candidates are not differently evaluated. Men should not have an edge because they have families to support, nor should a question be raised against a woman because she has children to care for. Other biases may also enter. Is there a reluctance to promote young women because they might have children in the future and take maternity leave? Is a woman discriminated against because people feel her husband's firm may transfer him to another city? Is there the feeling that some types of students or schools are best handled by a woman or a man?

No one activity can be expected to redress the imbalance that has occurred in the distribution of authority among men and women in the Toronto school system. Any attack on this problem must incorporate changes in what girls learn informally in school about occupations, changes in the way that women and men teachers prepare themselves for and perform their jobs, and changes in active discrimination in who is encouraged to apply for promotion and who receives it.

Changes to the front end of the cycle will have a direct effect on the most people. Changes at the promotion end itself will affect only a few people directly. However, the indirect effects on expectations, the accumulation of Credentials, and on Job Performance may be enormous.

There is one basic flaw in this study in that we have adopted a static approach. We have stopped the clock at one point in time, and taken a look at the career development of people frozen in that instant. However, not everyone who enters teaching remains. Some career

interruptions are permanent. At this point we have no idea how many men and women leave teaching entirely. If the number for women greatly exceeds the number for men, a whole new variable is introduced. The present study has looked only at men and women who, although they may have left for a time, have returned. A better strategy, from some points of view, would be to look at people at the end of their careers. Of those who are still in teaching, how many have been promoted, and how does the final position they hold relate to their experience and performance.

The difficulty with this strategy is that it looks only at the past, when there are reasons to believe that society is in an active period of change particulary with regard to the roles of men and women. Therefore, we chose to look at the entire academic complement, some of whom were just beginning their careers, some of whom were in the middle, and some of whom were nearing the end. There is evidence within this report that women are already changing their conception of themselves. Fully 68% of the women in our sample aspired to positions of responsibility. This is more than has been reported in previous studies. It remains to be seen how society and the system will respond.

APPENDIX A

TEACHER QUESTIONNAIRE

Please fill out the questionnaire by circling the number of your choice under each question.

1. Sex: a) Male b) Female

2. Age: a) 20-29 b) 30-39 c) 40-49 d) 50+

3. Marital Status: a) single
b) married
c) divorced
d) separated
e) widowed

4. How many children do you have at home in the following age categories?

	Age	Number
a)	0-4	0 1 2 3 4
b)	5-10	0 1 2 3 4
c)	11-16	0 1 2 3 4
d)	16+	0 1 2 3 4

e) Does anyone else live with you for whom you are responsible?

a) Yes b) No

5. How many years of experience do you have in education?

a) 1-2 b) 3-5 c) 6-10 d) 11-20 e) 20+

6. For how many years have you been with the Toronto system?

a) 1-2 b) 3-5 c) 6-10 d) 11-20 e) 20+

7. What is your present position?

a) public school classroom teacher
b) secondary school classroom teacher
c) special class teacher elementary
d) consultant
e) teacher-librarian
f) department or assistant department head
g) vice-principal
h) principal
i) other supervisory or administrative officer

8. If you are a PUBLIC SCHOOL CLASSROOM TEACHER (i.e. answered "a" to the above), what is your grade division?

a) kindergarten b) primary c) junior d) senior e) 2 or more levels

9. If you are a SECONDARY SCHOOL CLASSROOM TEACHER, in what area do you teach.

a) communications
b) social & environmental studies
c) pure & applied sciences
d) arts

10. Do you have a degree?

a) bachelor's degree b) graduate degree c) none

11. Do you hold any type of specialist certificate from Ministerial courses?

a) Yes b) No

12. Are you currently pursuing a degree or certificate?

a) not pursuing any degree or certificate
b) bachelor's degree
c) graduate degree
d) specialist certificate

13. Have you ever been offered any promotions for which you did not directly apply?

a) Yes b) No

If yes, please circle each position(s) you were offered, and indicate whether or not you accepted.

Position	Accepted
a) Consultant	1. Yes 2. No
b) Department or assistant department head	1. Yes 2. No
c) Vice-principal	1. Yes 2. No
d) Principal	1. Yes 2. No
e) Other supervisory or administrative position	1. Yes 2. No

14. Have you ever directly applied for any promotions?

a) Yes b) No

If yes, please circle each position for which you have applied, indicate the number of applications you have made, and whether or not you were ultimately successful.

Position	No. of Applications	Ultimately Successful
a) Consultant	1 2 3 4+	1. Yes 2. No
b) Department or assistant department head	1 2 3 4+	1. Yes 2. No
c) Vice-principal	1 2 3 4+	1. Yes 2. No
d) Principal	1 2 3 4+	1. Yes 2. No
e) Other supervisory or administrative position	1 2 3 4+	1. Yes 2. No

15. Have you ever been encouraged to apply for promotion to a position of greater responsibility?

a) Yes b) No

If yes, please circle each of the following sources from which you have received such encouragement.

a) Co-workers

b) Friends

c) Family

d) Vice-principal

e) Principal

f) Area superintendent

g) Other supervisory or administrative official

16. Have there been any breaks in your teaching career?

a) Yes b) No

If yes, please indicate the reason and length of time for each break.

	Reason	Length of Time
First Break	1. Marriage or other family responsibilities 2. Maternity 3. Study leave or sabbatical 4. Travel 5. Non-teaching job 6. Health 7. Other _____	1. Less than 1 year 2. 1 to 4 years 3. 5 to 10 years 4. More than 10 years

	1. Marriage or other family responsibilities	1. Less than 1 year
	2. Maternity	
Second Break	3. Study leave or sabbatical	2. 1 to 4 years
	4. Travel	
	5. Non-teaching job	3. 5 to 10 years
	6. Health	
	7. Other _____	4. More than 10 years

	1. Marriage or other family responsibilities	1. Less than 1 year
	2. Maternity	
Third Break	3. Study leave or sabbatical	2. 1 to 4 years
	4. Travel	
	5. Non-teaching job	3. 5 to 10 years
	6. Health	
	7. Other _____	4. More than 10 years

17. Do you anticipate any future breaks in your career?

a) Yes b) No

If yes, give the reason and expected length of time.

Reason	Length of Time
1. Marriage or other family responsibilities	1. Less than 1 year
2. Maternity	
3. Study leave or sabbatical	2. 1 to 4 years
4. Travel	
5. Non-teaching job	3. 5 to 10 years
6. Health	
7. Other _____	4. More than 10 years

18. Have you introduced any innovations into the schools in which you have taught over the course of your teaching career?

a) Yes b) No

If No, go on to question 19.

If yes, please circle each of the areas in which you feel you have made a contribution, and indicate how extensive a contribution you feel it was.

Area	Contribution
a) Subject matter	1. Major 2. Minor
b) Teaching methods	1. Major 2. Minor
c) Techniques of evaluation	1. Major 2. Minor
d) Extra-curricular activities	1. Major 2. Minor

e) Out-of-classroom educational experiences (e.g. field trips, foreign tours) 1. Major 2. Minor

f) Classroom grouping 1. Major 2. Minor

g) Parent programmes 1. Major 2. Minor

h) Community programmes 1. Major 2. Minor

i) Other _____ 1. Major 2. Minor

Have other teachers in the school in which you have taught generally been aware of the change(s) you have introduced?

a) Yes b) No

Generally speaking, how much encouragement or recognition have you received from principals in these attempts?

a) Very little

b) Some

c) A great deal

How much encouragement or recognition have you received from other supervisory and administrative personnel?

a) Very little

b) Some

c) A great deal

19. Is your current principal aware of your classroom programme (answer only if you are a classroom teacher)?

a) Yes

b) To some extent

c) No

20. Suppose a position of responsibility became available either in your school or elsewhere in the system. Which of your co-workers and supervisors do you feel know you well enough and think well enough of you to recommend you for the position. (You may circle more than 1.)

a) Principal

b) Area Superintendent

c) Other administrative officials

d) Trustees

21. What are your long-range professional objectives?

a) Elementary classroom teaching

b) Secondary classroom teaching

c) Special education teacher

d) Teacher-librarian

e) Guidance counsellor

f) Educational support personnel - school psychologist, social worker, research

g) Department chairman or head

h) Vice-principal

i) Principal

j) Area or central administration

k) Post-secondary teaching

l) Another career outside of education

22. There are many reasons for choosing or remaining in a job or career. Please indicate how important each of the following reasons is to you.

Reason	Importance
a) Gives me an opportunity to work with people rather than things.	1. High 2. Medium 3. Low
b) Gives me an opportunity to be helpful to others.	1. High 2. Medium 3. Low
c) Provides a chance to earn a good deal of money.	1. High 2. Medium 3. Low
d) Gives me a social status and prestige.	1. High 2. Medium 3. Low
e) Enables me to look forward to a stable secure future.	1. High 2. Medium 3. Low
f) Provides an opportunity to use my special abilities and aptitudes.	1. High 2. Medium 3. Low
g) Permits me to be creative and original.	1. High 2. Medium 3. Low
h) Leaves me relatively free of supervision by others.	1. High 2. Medium 3. Low
i) Gives me a chance to exercise leadership.	1. High 2. Medium 3. Low
j) Provides me with adventure.	1. High 2. Medium 3. Low

23. Please rate these same reasons according to how adequately you feel they are satisfied in classroom teaching.

Reason	Satisfaction
a) Gives me an opportunity to work with people rather than things.	1. High 2. Medium 3. Low
b) Gives me an opportunity to be helpful to others.	1. High 2. Medium 3. Low
c) Provides a chance to earn a good deal of money.	1. High 2. Medium 3. Low
d) Gives me a social status and prestige.	1. High 2. Medium 3. Low
e) Enables me to look forward to a stable secure future.	1. High 2. Medium 3. Low
f) Provides an opportunity to use my special abilities and aptitudes.	1. High 2. Medium 3. Low
g) Permits me to be creative and original.	1. High 2. Medium 3. Low
h) Leaves me relatively free of supervision by others.	1. High 2. Medium 3. Low
i) Gives me a chance to exercise leadership.	1. High 2. Medium 3. Low
j) Provides me with adventure.	1. High 2. Medium 3. Low

24. Rate these same reasons once more according to how adequately you feel they are/would be satisfied within an administrative position in education.

Reason	Satisfaction
a) Gives me an opportunity to work with people rather than things.	1. High 2. Medium 3. Low
b) Gives me an opportunity to be helpful to others.	1. High 2. Medium 3. Low
c) Provides a chance to earn a good deal of money.	1. High 2. Medium 3. Low
d) Gives me a social status and prestige.	1. High 2. Medium 3. Low
e) Enables me to look forward to a stable secure future.	1. High 2. Medium 3. Low
f) Provides an opportunity to use my special abilities and aptitudes.	1. High 2. Medium 3. Low

g) Permits me to be creative and original. 1. High 2. Medium 3. Low

h) Leaves me relatively free of supervision by others. 1. High 2. Medium 3. Low

i) Gives me a chance to exercise leadership. 1. High 2. Medium 3. Low

j) Provides me with adventure. 1. High 2. Medium 3. Low

25. What assignments other than direct classroom teaching have you undertaken in the past year? (Circle each one that applies.)

a) Extra academic work with pupils outside of class.

b) Sports.

c) Extracurricular drama, music, etc.

d) Fund raising.

e) Professional development.

f) Special programme days.

g) Planning for field trips.

h) Professional activities (e.g., T.T.F.).

i) Administrative responsibilities (other than those directly required by your position).

26. About how many hours per week are you directly involved with your work outside of school hours?

a) 1-5
b) 6-10
c) 11-15
d) more than 15

27. Most people find that they are more effective at some aspects of their job than others. Please indicate how effective you are in each of the following areas.

Area	Effectiveness
a) Working with parents and parent groups.	1. High 2. Medium 3. Low
b) Keeping your students under control.	1. High 2. Medium 3. Low
c) Working with fellow staff members.	1. High 2. Medium 3. Low
d) Communicating and stimulating your pupils' interest in the subject matter you teach.	1. High 2. Medium 3. Low
e) Working with students and meeting their needs.	1. High 2. Medium 3. Low

f) Identifying and developing school goals. 1. High 2. Medium 3. Low

g) Working with the school administration. 1. High 2. Medium 3. Low

h) Working with community groups. 1. High 2. Medium 3. Low

APPENDIX B

APPENDIX B

1. Throughout this study, career development is described in terms of Paper Credentials, Job Performance, Encouragements, Occupational Values, Applications, Offers and Position. Most of these variables have several indicators, each of which is an attempt to measure a different facet of the central concept. These variable clusters are described below.

Central Concept	Indicator	Description
A. Paper Credentials	(1) Degrees	Whether or not respondent had a bachelor's or graduate degree.
	(2) Certificate	Whether or not respondent held a specialist certificate from courses run by the Ministry of Education.
	(3) Studying	Whether or not respondent was currently studying for a degree or certificate.
	(4) Age	Respondent's age, as: 20-29, 30-39, 40-49, 50+.
	(5) Years in Education	Number of years respondent has been in education, as: 1-10, 11-20, 20+.
	(6) Years with Toronto	Number of years respondent has been with the Toronto system, as: 1-10, 11-20, 20+.
	(7) Moving	Proportion of total teaching career spent with the Toronto system - variable (6) divided by (7). Since years experience was coded into only 3 equal interval categories, "Moving" can assume 3 possible values: .33, .67, 1.00.

Central Concept	Indicator	Description
	(8) Career Interruptions	Whether or not respondent has ever had an interruption in their career for study, maternity, health, or any other reason.
B. Job Performance	(9) Extra Hours	Number of hours per week directly involved with work outside of school hours. Coded as: 1-5, 6-10, 11-13, 15+.
	(10) Extra Assignments	Number of extra assignments undertaken in the past year. One point for each category, see question 22.
	(11) Perceived Classroom Effectiveness	Self evaluated ability in 3 areas; see questions 27b, 27d, 27e. One point for "low", two points for "medium", three points for "high".
	(12) Perceived Administrative Effectiveness	Self evaluated ability in five areas; see questions 27a, 27c, 27f, 27g, 27h. Scored as (11).
	(13) Innovativeness	Self evaluated innovativeness in nine areas; see question 18. Zero points for no contribution, one point for "minor" contribution, two points for "major" contribution in each area.
C. Encouragement	(14) Encouragement	Number of seven possible sources from which encouragement received to apply for promotion; see question 15.
D. Occupational Values	(15) Perceived Classroom Satisfaction	Score on eleven different values for how well satisfied in classroom teaching weighed by importance of value to self; see questions 22

Central Concept	Indicator	Description
		and 23. Satisfaction and importance scored as follows: low - 1 point; medium - 2 points; high - 3 points.
	(16) Perceived Administrative Satisfaction	Score on eleven values for how well satisfied in administrative position weighed by importance of value to self; see questions 22 and 24. Scored as (15).
E. Applications	Applications	Total number of applications made for five different position categories; see question 14.
F. Offers	Offers	Number of positions offered; see question 13.
G. Dependants	Dependants	Number of children and other dependants; see question 4.
H. Marriage	Marriage	Whether or not respondent is married.
I. Position	Position	Whether or not respondent currently holds a position of responsibility - i.e. consultant, department or assistant department head, vice principal, principal, other supervisory or administrative official.

2. A simple regression analysis of Sex on whether or not a person held a position of responsibility found Sex accounting for 8% of the variance.

3. Regression analyses were used to assess the effect of Sex on each of the Paper Credential variables relating to career history.

TABLE 3B

RESULTS OF REGRESSION ANALYSES OF SEX ON CAREER HISTORY VARIABLES (PAPER CREDENTIALS)

Dependent Variables	R Square	Simple R[a]	F[b]
Age	.01917	-.13847	20.193*
Years in Education	.02086	-.14444	22.011*
Years in Toronto	.02164	-.14711	22.851*
Moving Index	.00011	.01068	0.118
Career Interruption	.04557	-.21347	49.323*

a A negative correlation indicates that women have less of the attribute in question.

b df = 1/1033; F required = 3.85, $p<.05$.

* F value is significant at or beyond the .05 level.

4. Multiple regression analyses were used to assess the effects of Sex on each of the Paper Credential variables relating to educational attainment after correcting for age and years experience. This was a stepwise procedure with variables assigned to the following inclusion levels (given from first to last entered): (1) age, number of years in education; (2) Sex, with a stepwise procedure, variables are entered in groups according to inclusion level.

Variables at the same inclusion level are entered simultaneously, and ordered by their ability to account for variance in the dependent variable. Thus, in this analysis, Sex is always entered last; age and years in education will always precede Sex, but the order in which they appear will vary.

TABLE 4B

RESULTS OF STEPWISE MULTIPLE REGRESSION ANALYSES OF SEX ON EDUCATIONAL ATTAINMENT (PAPER CREDENTIALS) CORRECTED FOR AGE AND YEARS EXPERIENCE IN EDUCATION

Dependent Variables	Inclusion Level	Independent Variables	Multiple R	R Square	RSQ Change	Simple R	F[a]
Degree	1	Years in Education	.29087	.08460	.08460	.29087	45.767*
		Age	.29090	.08462	.00002	.20318	0.142
	2	Sex	.31989	.10233	.01771	-.17299	20.435*
Certificate	1	Age	.16590	.02752	.02752	.16590	7.985*
		Years in Education	.17030	.02900	.00148	.14467	1.257
	2	Sex	.18196	.03311	.00411	-.08878	4.399*
Studying	1	Years in Education	.25673	.06591	.06591	-.25673	22.066*
		Age	.26208	.06869	.00278	-.21906	2.818*
	2	Sex	.26585	.07068	.00199	0.08363	2.216

a df = 3/1036; F required = 2.61; $p < .05$.

* F value is significant at or beyond the .05 level.

5. The remainder of the analysis proceeds in this manner. Using the model of career development diagrammed in Figure 1, the analysis proceeds in piecemeal fashion with dependent variables chosen in left to right order. Independent variables are entered in right to left order to reflect the directness of their action on the dependent variables. Sex is always entered last, to determine whether or not it has a direct action on the dependent variable in question, in addition to any indirect action which results from its prior effect on previous independent variables.

In the analysis of Job Performance, the first variable group is Paper Credentials. The effect of Sex on Paper Credentials has already been determined. The following analysis will determine the effect of Paper Credentials on Job Performance. However, we want to see whether or not Sex exerts an additional effect directly on Job Performance. Thus, all Paper Credential variables are assigned to earlier inclusion levels, and Sex is entered last after the former have been allowed to account for the variance.

The analysis of encouragement will enter Job Performance variables first, since these are believed to have the most direct influence on encouragement. However, Paper Credentials may have a direct effect in addition to its indirect effect via Job Performance, and so Paper Credential variables are entered again after those relating to Job Performance. Sex affects both Paper Credentials and Job Performance, and thus Encouragement, but Sex may also affect Encouragement directly. Therefore, it is entered again after these two groups.

Within a variable group - i.e. Paper Credentials, Job Performance, etc. - variables were assigned to the same inclusion level that seemed, to the author, to constitute a logical grouping. The ordering of inclusion levels within a variable group follows the author's view of the sequence of events, or their importance, or their objectivity and straightforwardness. This was often an arbitrary decision that had to be made on some basis, and it was felt that the simplest variables should be looked at first.

6. Multiple regression analysis was used with each of the Paper Credential variables plus Sex regressed on each of the Job Performance variables. This was a stepwise procedure in variables assigned to inclusion levels, as indicated in the following tables.

TABLE 6B.1

RESULTS OF STEPWISE MULTIPLE REGRESSION ANALYSES OF PAPER CREDENTIAL VARIABLES AND SEX ON NUMBER OF EXTRA HOURS WORKED (JOB PERFORMANCE)

Inclusion Level	Independent Variables	Multiple R	R Square	RSQ Change	Simple R	F[b]
	Degree	.22246	.04949	.04949	.22246	38.164*
1	Studying	.22260	.04955	.00006	-.08797	0.009
	Certificate	.22272	.04960	.00006	.03848	0.022
	Years in Toronto	.22330	.04986	.00026	.04095	0.185
2	Moving Index	.22337	.04990	.00003	-.01813	0.117
	Years in Education	.22347	.04994	.00005	.05006	0.119
3	Career Interruption	.22885	.05237	.00243	.03162	0.578
4	Sex	.24773	.06137	.00900	-.13844	9.785*
	Age[a]	.24781	.06141	.00004	.03138	0.043

a Age did not satisfy the F tolerance level at inclusion levels 2 or 3, and was therefore added to level 4.

b df = 9/1016; F required = 1.89; $p<.05$.

* F value is significant at or beyond the .05 level.

TABLE 6B.2

RESULTS OF STEPWISE MULTIPLE REGRESSION ANALYSES OF PAPER CREDENTIAL VARIABLES AND SEX ON NUMBER OF EXTRA ASSIGNMENTS UNDERTAKEN (JOB PERFORMANCE)

Inclusion Level	Independent Variables	Multiple R	R Square	RSQ Change	Simple R	F[a]
	Studying	.12271	.01506	.01506	.12271	27.436*
1	Degree	.16270	.02647	.01141	.04427	4.882*
	Certificate	.16331	.02667	.00020	.00044	0.255
	Years in Toronto	.19197	.03685	.01019	.08263	1.978*
2	Age	.24400	.05953	.02268	-.07616	25.779*[b]
	Moving	.24769	.06135	.00181	.04494	0.698
	Years in Education	.24850	.06175	.00040	.04886	0.173
3	Career Interruptions	.27606	.07621	.01446	.13152	7.004*
4	Sex	.31182	.09723	.02102	-.17755	23.658*

a df = 9/1016; F required = 1.88; $p<.05$.

b Effects are significant but in a negative direction.

* F value is significant at or beyond the .05 level.

TABLE 6B.3

RESULTS OF STEPWISE MULTIPLE REGRESSION ANALYSES OF PAPER CREDENTIALS AND SEX ON PERCEIVED EFFECTIVENESS IN THE CLASSROOM (JOB PERFORMANCE)

Inclusion Level	Independent Variables	Multiple R	R Square	RSQ Change	Simple R	F[a]
	Degree	.18446	.03403	.03403	-.18446	15.779*[b]
1	Certificate	.19358	.03747	.00345	.03182	5.964*
	Studying	.20089	.04036	.00288	.11970	0.716
	Years in Toronto	.26981	.07279	.03244	-.22165	8.096*[b]
2	Age	.27389	.07502	.00222	-.09700	1.434
	Years in Education	.27449	.07535	.00033	-.17270	3.885*
	Moving	.28003	.07842	.00307	-.05593	3.439*
3	Break	.28110	.07901	.00060	.04773	0.937
4	Sex	.28187	.07945	.00043	.05863	0.483

a df = 9/1025; F required = 1.89; $p < .05$.

b Effects are significant but in a negative direction

* F value is significant at or beyond the .05 level.

TABLE 6B.4

RESULTS OF STEPWISE MULTIPLE REGRESSION ANALYSES OF PAPER CREDENTIALS AND SEX ON PERCEIVED EFFECTIVENESS IN ADMINISTRATION (JOB PERFORMANCE)

Inclusion Level	Independent Variables	Multiple R	R Square	RSQ Change	Simple R	F[a]
	Degree	.12582	.01583	.01583	.12582	5.575*
1	Certificate	.13687	.01873	.00290	.07128	1.329
	Studying	.14471	.02094	.00221	-.01761	9.395*
	Years in Toronto	.31302	.09798	.07704	.29292	5.515*
2	Age	.31410	.09866	.00068	.19868	0.556
	Moving	.31421	.09873	.00007	.03468	1.574
	Years in Education	.31645	.10014	.00141	.25495	1.454
3	Break	.31813	.10120	.00106	-.00432	0.293
4	Sex	.32382	.10486	.00366	-.12041	4.187*

a df = 9/1025; F required = 1.89; $p<.05$.

* F value is significant at or beyond the .05 level.

TABLE 6B.5

RESULTS OF STEPWISE MULTIPLE REGRESSION ANALYSES OF PAPER CREDENTIAL VARIABLES AND SEX ON DEGREE OF INNOVATIVENESS (JOB PERFORMANCE)

Inclusion Level	Independent Variables	Multiple R	R Square	RSQ Change	Simple R	F[b]
	Degree	.30237	.09143	.09143	.30237	61.388*
1	Studying	.31139	.09696	.00553	-.06175	21.966*
	Certificate	.31434	.09881	.00185	.07648	0.315
	Years in Toronto	.46464	.21589	.11708	.39331	2.624*
2	Age	.46523	.21644	.00055	.22273	2.687*[c]
	Moving	.46678	.21788	.00144	.03017	0.035
3	Career Interruption	.46801	.21903	.00116	-.02136	0.005
	Years in Education[a]	.46802	.21904	.00001	.35629	0.027
4	Sex	.48724	.23740	.01836	-.22543	24.458*

a This variable did not satisfy the F tolerance level at inclusion level 2, and was therefore entered at level 3.

b df = 9/1016; F required = 1.88; $p < .05$.

c Effects are significant but in a negative direction.

* F value is significant at or beyond the .05 level.

7. This is self report data and, therefore, somewhat suspect. We, therefore, did a limited validity study of this part of the questionnaire. A random sample of 40 of the early returnees, who said that they had been innovative, was selected. Half were chosen from the elementary and half from the secondary panel. The teachers in this group were telephoned and asked to describe their innovation. These descriptions were then briefly summarized, reproduced, and shown to fourteen people experienced in education - about evenly split among consultants and administrative personnel of the Toronto Board and professors of education at OISE. These people were asked to judge each description as to whether it represented no innovation, a minor innovation, or a major innovation.

   Overall, our expert judges agreed with the report of teachers themselves. Only five items were not endorsed as an innovation. The remaining items were judged to truly represent innovations by 62% to 93% of the judges, with an average of 80%.

   Thus, we have some confidence in this data. This substudy, however, only precludes the possibility that teachers overestimated their contributions. There is no way of checking how many respondents underestimated their abilities and never reported contributions which indeed were innovative. This is more likely to have occured among women than among men, since it has been shown that both men and women tend to underestimate the work of women (Goldberg, 1968; Touhey, 1974).

8. Regression analyses similar to (6) were done separately for male and females, with number of dependents and marriage added at inclusion levels 4 and 5.

TABLE 8B

SUMMARY OF STEPWISE MULTIPLE REGRESSION ANALYSES FOR MEN AND WOMEN OF PAPER CREDENTIAL VARIABLES, NUMBER OF DEPENDENTS, AND MARRIAGE ON JOB PERFORMANCE VARIABLES

		RSQ Change									
		No. of Extra Assignments		No. of Extra Hours p.Week		Perceived Effectiveness					
						Classroom		Administration		Innovativeness	
Inclusion Level	Independent Variables	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
1[a]	Degree	.015*	.000	.047*	.036*	.039[c]*	.022[c]*	.028*	.000	.096*	.051*
	Certificate	.001	.003*	.000	.000	.007*	.000	.000	.016*	.000	.005
	Studying	.013*	.029*	.001	.003*	.004	.002	.007*	.000	.008*	.005*
2	Age	.011*	.006*	.000	.001	.002	.003	.004	-[b]	.002[c]*	.000
	Years in Education	.003	.008*	.009	.005	.000*	.001	.003	.000	.000	.002
	Years in Toronto	.033	.013*	-[b]	.001	.027[c]*	.036[c]*	.085*	.052*	.110*	.107*
	Moving	.000	.001*	-[b]	.000	.004	.002	.000[c]*	.001	.001	.000
3	Career Interruption	.012*	.004*	.000	.001	.002	.000	.000	.001	.000	.000
4	Dependents	.002	.001	.002	.002	.007*	.004	-[b]	.008*	.000	.014*
5	Marriage	.001	.001	.001	.001	.001	-[b]	.002	.000	.000	.000

a It must be remembered that, within an inclusion level, variables may have been entered in a different order for men and women, according to their relative ability to account for the variance.

b Variables excluded because they did not add significantly to the regression equation.

c Effects are significant but in negative direction.

* F value is significant at or beyond the .05 level.

9. The regression analysis of Job Performance, Paper Credentials, and Sex on encouragement entered variables at 8 inclusion levels, as described in Table 9B.

TABLE 9 B

RESULTS OF STEPWISE MULTIPLE REGRESSION ANALYSIS OF JOB PERFORMANCE, PAPER CREDENTIALS, AND SEX ON ENCOURAGEMENT

Inclusion Level	Independent Variables	Multiple R	R Square	RSQ Change	Simple R	F[a]
1	Extra Assignments	0.22542	0.05081	0.05081	0.22542	4.363*
	Hours	0.24309	0.05909	0.00828	0.12591	0.004
2	Classroom Effectiveness	0.25378	0.06441	0.00531	-0.03945	0.000
3	Administrative Effectiveness	0.31016	0.09620	0.03180	0.22855	1.524
4	Innovativeness	0.45590	0.20784	0.11164	0.44131	72.884*
5	Degree	0.48310	0.23339	0.02554	0.29396	20.858*
	Certificate	0.48486	0.23509	0.00170	0.09546	1.231
	Studying	0.48515	0.23537	0.00028	-0.11177	0.010
6	Years with Toronto	0.49498	0.24500	0.00963	0.30023	6.952*
	Moving	0.49645	0.24646	0.00146	-0.01347	5.407*[b]
	Years in Education	0.49968	0.24968	0.00321	0.28506	3.599*[b]
	Age	0.50101	0.25101	0.00133	0.16038	2.246*[b]
7	Career Interruption	0.50109	0.25109	0.00008	-0.01760	0.019
8	Sex	0.50372	0.25373	0.00265	-0.18311	3.584*

a df = 14/1011; F required = 1.67: $p < .05$.

b Effects are significant but in a negative direction.

* F value is significant at or beyond the .05 level.

10. A similar regression analysis to (9) was done separately for males and females with number of dependents and marriage added at inclusion levels 8 and 9.

TABLE 10B

SUMMARY OF STEPWISE MULTIPLE REGRESSION ANALYSIS FOR MEN AND WOMEN OF JOB PERFORMANCE, PAPER CREDENTIALS, DEPENDENTS, AND MARRIAGE ON ENCOURAGEMENT

Inclusion Level	Independent Variables	RSQ Change Men[a]	RSQ Change Women[b]
1	Extra Assignments	0.03913	0.04045*
	Extra Hours	0.00568	0.00705
2	Classroom Effectiveness	0.00569	0.00146
3	Administrative Effectiveness	0.02567	0.03837*
4	Innovativeness	0.10122*	0.11721*
5	Degree	0.01571*	0.04577*
	Studying	0.00350	0.00214*
	Certificate	0.00166	0.00026
6	Years with Toronto	0.00493	0.01998*
	Age	0.00247*[c]	0.00060
	Moving	0.00351	0.00205*[c]
	Years in Education	0.00130	0.00380*[c]
7	Career Interruptions	0.00002	0.00037
8	Dependents	0.01093	0.00015
9	Marriage	0.00082*	0.00013

a df = 15/467; F required = 1.67; $p < .05$.

b df = 15/421; F required = 1.67; $p < .05$.

c Effects are significant but in a negative direction.

* F value is significant at or beyond the .05 level.

11. A regression analysis was performed for the effects of Sex on perceived satisfaction to be derived from administration. Sex had a significant effect with $F = 8.417$; $df = 1/1162$; $RSQ = .7$; $p < .05$.

12. The regression analysis of encouragement, values, job performance, paper credentials, and Sex on applications entered variables at 11 inclusion levels, as described in Table 12B.

TABLE 12B

SUMMARY OF STEPWISE MULTIPLE REGRESSION ANALYSIS OF ENCOURAGEMENT, JOB PERFORMANCE AND PAPER CREDENTIALS ON APPLICATIONS

Inclusion Level	Independent Variables	Multiple R	R Square	RSQ Change	Simple R	F
1	Encouragement	0.43807	0.19190	0.19190	0.43807	92.635*
2	Satisfaction from Administration	0.43876	0.19251	0.00061	0.02556	0.416
3	Satisfaction from Teaching	0.44331	0.19652	0.00402	-0.06356	0.248
4	Hours	0.44513	0.19814	0.00161	0.09541	0.553
	Extra Assignments	0.44519	0.19819	0.00005	0.09631	2.691*c
5	Class Effectiveness	0.45315	0.20535	0.00716	-0.10932	1.397
6	Administration Effectiveness	0.46759	0.21864	0.01330	0.19351	2.781*
7	Innovativeness	0.48009	0.23048	0.01184	0.31475	1.772
8	Degree	0.51643	0.26670	0.03621	0.35435	33.931*
	Certificate	0.53263	0.28369	0.01699	0.20139	20.131*
	Studying	0.53268	0.28375	0.00006	-0.16803	0.271
9	Years with Toronto	0.54173	0.29347	0.00973	0.31938	0.844
	Years in Education	0.54217	0.29395	0.00048	0.28736	0.117
	Moving	0.54222	0.29401	0.00005	0.02161	0.053
10	Career Interruptions	0.54628	0.29842	0.00442	0.02196	1.049
	Age[a]	0.54630	0.29844	0.00002	0.19970	0.186
11	Sex	0.56837	0.32305	0.02461*	-0.29379	36.646*

a Age did not satisfy the tolerance requirements for F at level 9 and was therefore added at level 10.

b df = 17/1008; F required = 1.67; $p < .05$.

c Effects are significant but in a negative direction.

* F value is significant at or beyond the .05 level.

13. A regression analysis similar to 12 was performed for men and women separately with dependents and marriage added at inclusion levels 11 and 12.

TABLE 13A

SUMMARY OF STEPWISE MULTIPLE REGRESSION ANALYSIS FOR MEN AND WOMEN OF ENCOURAGEMENT, VALUES, JOB PERFORMANCE, PAPER CREDENTIALS, DEPENDENTS, AND MARRIAGE ON APPLICATIONS

Inclusion Level	Independent Variable	RSQ Change Men[a]	RSQ Change Women[b]
1	Encouragement	0.16189*	0.20175*
2	Satisfaction from Administration	0.00037	0.00063
3	Satisfaction from Teaching	0.00892	0.00204
4	Extra Assignments	0.00072	0.00355
	Hours	0.00051	0.00062*[d]
5	Class Effectiveness	0.00609	0.00432
6	Administrative Effectiveness	0.01337*	0.01080
7	Innovativeness	0.00244	0.04068*
8	Degree	0.03343*	0.05415*
	Certificate	0.02527*	0.00299
	Studying	0.00068	0.00388
9	Years in Toronto	0.01291	0.00550
	Years in Education	0.00180	----[c]
	Moving	0.00009	-0.00061
	Age	0.00025	0.00008
10	Career Interruptions	0.00371*	0.00122
11	Dependents	0.01136*	0.00048
12	Marriage	0.00091	0.00002

a Required F = 1.67; df = 18/654; $p < .05$.
b Required F = 1.67; df = 17/419; $p < .05$.
c This variable was not included in the regression for women because of failure to meet the tolerance level requirements for F.
d Effects are significant but in a negative direction.
* F value is significant at or beyond the .05 level.

14. The regression analysis of applications, encouragement, job performance, paper credentials, and Sex on position was performed with variables entered at 10 inclusion levels, as described in Table 14. The two value measures, perceived satisfaction with teaching and with administration, were not included as independent variables because of their failure to account for significant proportions of the variance in applications.

TABLE 14[B]

SUMMARY OF STEPWISE MULTIPLE REGRESSION ANALYSIS OF APPLICATIONS, ENCOURAGEMENT, JOB PERFORMANCE, PAPER CREDENTIALS, AND SEX ON POSITION

Inclusion Level	Independent Variables	Multiple R	R Square	RSQ Change	Simple R	F[b]
1	Applications	0.49455	0.24458	0.24458	0.49455	62.304*
2	Encouragement	0.52364	0.27419	0.02962	0.37135	1.187
3	Hours	0.54114	0.29283	0.01863	0.19857	13.121*
4	Class Effectiveness	0.55683	0.31006	0.01723	-0.18670	4.858*[c]
	Extra[a] Assignments	0.55732	0.31060	0.00054	0.09893	3.929*[c]
5	Administrative Effectiveness	0.58825	0.34604	0.03544	0.27321	7.015*
6	Innovativeness	0.62172	0.38653	0.04049	0.43240	17.331*
7	Degree	0.64774	0.41956	0.03303	0.44417	35.660*
	Studying	0.65413	0.42789	0.00833	-0.27153	1.165
	Certificate	0.65894	0.43421	0.00631	0.20670	8.612*
8	Years in Toronto	0.71590	0.51251	0.07831	0.56491	9.373*
	Moving	0.71871	0.51654	0.00403	0.00060	2.756*
	Years in Education	0.71909	0.51709	0.00055	0.53158	0.907
	Age	0.71914	0.51716	0.00007	0.37442	0.410
9	Carrer Interruptions	0.72021	0.51870	0.00154	-0.03598	0.852
10	Sex	0.72445	0.52483	0.00613	-0.28761	13.009*

a Extra assignments did not satisfy the tolerance level for F at inclusion level 3 and was added at level 4.
b df = 16/1009; F required = 1.67; $p < .05$.
c Effects are significant but in a negative direction.
* F value is significant at or beyond the .05 level.

15. A similar analysis to 14 was done for men and women separately, with dependents and marriage added at inclusion levels 10 and 11.

TABLE 15

SUMMARY OF STEPWISE MULTIPLE REGRESSION ANALYSES FOR MEN AND WOMEN OF APPLICATIONS, ENCOURAGEMENT, JOB PERFORMANCE, PAPER CREDENTIALS, DEPENDENTS, AND MARRIAGE ON POSITION

Inclusion Level	Independent Variables	RSQ Change Men[a]	Women[b]
1	Applications	0.20406*	0.21695*
2	Encouragement	0.02728	0.02774
3	Hours	0.01143*	0.02525*
	Extra Assignments	0.00028	0.00592*[c]
4	Class Effectiveness	0.01439	0.02293*[c]
5	Administrative Effectiveness	0.04452*	0.02972*
6	Innovativeness	0.03627*	0.03880*
7	Degree	0.03246*	0.03632*
	Studying	0.00629	0.00593
	Certificate	0.01605*	0.00045
8	Years in Toronto	0.10046*	0.06618
	Moving	0.00929*[c]	0.00155
	Years in Education	0.00125	0.00016
	Age	0.00040	0.00064
9	Career Interruptions	0.00022	0.00035
10	Dependents	0.00493*	0.00007
11	Marriage	0.00008	0.00482*

a df = 17/565; F required = 1.67; $p < .05$.

b df = 17/419; F required = 1.67; $p < .05$.

c Effects are significant but in a negative direction

* F value is significant at or beyond the .05 level.

16. The regression analysis of Job Performance, Paper Credentials, and Sex on offers was performed with variables entered at 8 inclusion levels, as described in Table 16.

TABLE 16

SUMMARY OF STEPWISE MULTIPLE REGRESSION ANALYSIS OF JOB PERFORMANCE, PAPER CREDENTIALS, AND SEX ON OFFERS OF PROMOTION

Inclusion Level	Independent Variables	Multiple R	R Square	RSQ Change	Simple R	F[a]
1	Hours	0.19425	0.03773	0.03773	0.19425	16.321*
	Extra Assignments	0.21518	0.04630	0.00857	0.12361	1.073
2	Class Effectiveness	0.30423	0.09256	0.04625	-0.20095	18.846*[b]
3	Administrative Effectiveness	0.36617	0.13408	0.04153	0.19709	1.346
4	Innovativeness	0.44868	0.20131	0.06723	0.37113	26.467*
5	Degree	0.46303	0.21440	0.01308	0.28044	5.734*
	Studying	0.46688	0.21798	0.00358	-0.15720	0.002
	Certificate	0.46923	0.22018	0.00220	0.09926	0.743
6	Years in Toronto	0.54496	0.29698	0.07680	0.46687	5.437*
	Age	0.54739	0.29964	0.00266	0.32471	2.816*
	Moving	0.54753	0.29979	0.00015	0.04420	0.753
	Years in Education	0.54790	0.30020	0.00040	0.42044	0.637
7	Career Interruptions	0.54838	0.30072	0.00052	-0.07893	0.633
8	Sex	0.54842	0.30077	0.00005	-0.12335	0.073

a df = 14/1034; F required = 1.67; $p<.05$.

b Effects is significant but in a negative direction.

* F value is significant at or beyond the .05 level.

REFERENCES

Centers, R., & Bugental, D. E. Intrinsic and extrinsic job motivations among different segments of the working population. Journal of Applied Psychology, 1966, 50(3), pp. 193-197.

Epstein, G. F., & Bronzaft, A. L. Female modesty in aspiration level. Journal of Counseling Psychology, 1974, 21(1), pp. 57- 60.

Goldberg, P. Are some women prejudiced against women? Transaction, April, 1968, pp. 28-30.

Greabell, L. C., & Olson, J. A. Role dissatisfaction and career contingencies among female elementary teachers. Journal of Spate, June, 1973, pp. 131-138.

Herman, M. H., & Sedlacek, W. E. Career orientation of high school and university women. Journal of National Association for Women Deans, Administrators and Counselors, Spring, 1974, pp. 161-166.

Horner, M. A bright woman is caught in a double bind. In achievement-oriented situations she worries not only about failure but also about success. Psychology Today, 1969, 3(6), pp. 36-38.

Looft, W. R. Vocational aspirations of second-grade girls. Psychological Reports, 1971, 28, pp. 241-242.

Mason, W. S., Dressel, R. J., & Bain, R. K. Sex role and the career orientations of beginning teachers. Harvard Educational Review, 1959, 29(4), pp. 370-383.

McMillin, M. R. Vocational commitment of college women. Journal of National Association for Women Deans, Administrators and Counselors, Summer, 1974, pp. 158-160.

Mickish, G. Can women function as successfully as men in the role of elementary principal? Research Reports in Educational Administration, 1971, 11(4), 20 pages.

Plost, M., & Rosen, M. J. Effect of sex of career models on occupational preferences of adolescents. Audio-Visual Communication Review, 1974, 22(1), pp. 41-50.

Schlossberg, N. K., & Goodman, J. A woman's place: children's sex stereotyping of occupations. Vocational Guidance Quarterly, 1972, 20(4), pp. 266-270.

Seawell, W. H., & Canady, R. L. Where have all the women gone? The National Elementary Principal, 1974, 53(4), pp. 47-49.

Stokes, S. The shortest shadow. Toronto: Federation of Women Teachers' Associations of Ontario, 1970.

Taynor, J., & Deaux, K. When women are more deserving than men: equity, attribution, and perceived sex differences. Journal of Personality and Social Psychology, 1973, 28(3), pp. 360-367.

Touhey, J. C. Effects of additional women professionals on ratings of occupational prestige and desirability. Journal of Personality and Social Psychology, 1974, 29(1), pp. 86-89.